REPORT ON

GEOLOGICAL MAPPING

AND SOIL TESTING SURVEY

JULY 23 TO AUGUST 30, 1982

TATER 29-68 and 71-86 CLAIMS

BRINCO EXPLORAM PROJECT

DAWSON MINING DISTRICT, Y.T.

CLAIM SHEET 116 C/7

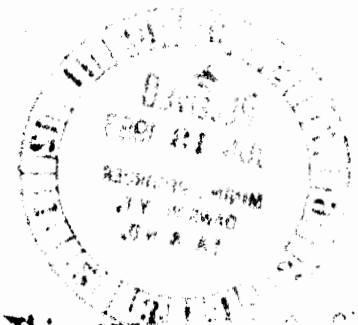
LATITUDE 64 26'N

LONGITUDE 140 40'W

R.J. CATHRO, B.A.Sc., P.Eng

J. SCOTT MURRAY

091460



This report is accepted by the Territorial Government Under the Quartz Mining Act and allowed as representation work in the amount of $ 9800 —.

P. Watson

for Regional Manager, Exploration and Geological Services for Commissioner of Yukon Territory.

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INTRODUCTION

The Tater 29-68 and 71-86 claims were staked for Brinco Exploram Project (Brinco Mining Ltd. and Exploram Minerals Ltd.) during June 1982. They are contiguous with the Tater 1-28 claims staked in 1981 and cover at least five poorly-exposed serpentinite bodies situated within 5 km of the former Clinton Mine. These ultramafites (called the Acheron, Judy, Cripple, Tim and Lookout) have been staked several times before but were difficult to explore for asbestos due to widespread overburden. Previous work included bulldozer trenching on three of them and a small diamond drill program on the Acheron ultramafite. Most of this work was concentrated where the overburden was thinnest and where the ultramafites were marked by obvious vegetation anomalies.

The 1982 field work consisted mainly of grid soil sampling, linecutting and geological mapping. A short trenching and roadbuilding program was performed July 28-30 using a Kamatsu D-6 size bulldozer contracted from L. Beck of Clinton Creek. Work was conducted from the Clinton Creek townsite and daily transportation to the property was by 4x4 pickup.

The Archer, Cathro crew consisted of party chief J.S. Murray and linecutter/samplers S. Beckmann and T. Carlson. Geologist C. Main joined the crew for a short period and R.J. Cathro provided senior supervision.

PROPERTY, LOCATION AND ACCESS

This property is situated on the northeast side of Clinton Creek, adjoining the Clinton Mine lease approximately 1.5 km east of the Clinton minesite, at 64 26'N and 140 40'W on claims sheet 116C/7. It consists of 84 contiguous mineral claims that were recorded in the name of Archer, Cathro & Associates (1981) Limited in the Dawson Mining District as follows:

Claim Name	No. of Claims	Record Numbers	Expiry Date
Tater 1	1	YA55746	13 May/85
2-9	8	YA55738-45	13 May/85
10-13	4	YA55747-50	13 May/85
14-28	15	YA64201-15	13 May/85
29-38	10	YA65151-60	20 Aug/83
39F-40F	2	YA65146-45	3 Aug/83
41-52	12	YA65042-53	17 Jun/83
53-64	12	YA65054-65	29 Jun/83
65-68	4	YA65094-97	20 Jun/83
*71-82	12	YA65066-77	29 Jun/83
83-86	4	YA65098-101	20 Jun/83
	84		

*Tater 69-70 claims not staked

The program was conducted from the Clinton Creek townsite, which is located about 100 km northwest of Dawson City by road, with access to the claims by the Clinton Mine access road which follows the western boundary of the property. Daily crew transportation was by Ford 4x4 pickup. An old dirt road leading easterly from the Clinton Mine road was reopened and extended for 3 km to the north during 1982, using a D-6 size, Kamatsu bulldozer.

HISTORY AND PREVIOUS WORK

General

The presence of asbestos in the Clinton Creek area had been known since before 1887, when the rumours were reported by the G.S.C.; however, the first asbestos property recorded was located on the west bank of the Yukon River, about 3 km south of Fortymile. This showing was staked initially in 1895, restaked as the Aurora claims in 1912 and subsequently restaked as the Verlene claims in 1928. The 1912 claim application stated that this was an asbestos occurrence. Chrysotile fibre up to 5 mm long occurs at this locality. It is associated with fibrous tremolite in two small, highly sheared, ultramafite bodies, one of which is capped by Tertiary columnar basalt. Much of the chrysotile is slip fibre and total fibre content is less than 1%. The showing has no current economic potential.

Clinton Mine

Exploration and development of the Clinton Mine was conducted independently of other exploration in the Clinton Creek basin and began with the optioning of the Caley and Clinton asbestos discoveries by Conwest. The discovery outcrops on Snowshoe Hill were first staked in April, 1957 by prospectors G. Walters and A. Anderson, who were grubstaked by Fred Caley, a Dawson merchant. Caley had optioned claims covering the Caley asbestos deposit on Cassiar Creek to Conwest the previous year and was successful in stimulating interest in asbestos exploration among residents of the Dawson area.

Caley's Clinton Creek claims were optioned by Conwest soon after they were recorded and were transferred to an affiliate, Cassiar Asbestos Corp. Ltd., late in 1957 following prospecting

and hand trenching. Cassiar explored with trenching, diamond drilling and two adits (250 m) in the main (west) zone on Porcupine Creek and a 365 m adit on a smaller zone 300 m to the east on Snowshoe Hill in 1957-58. Initial tunnelling however, failed to locate the main orebody on Porcupine Hill and it was not until a fluxgate magnetometer survey was performed in 1961, that the major portion of the Porcupine ultramafite was outlined.

The property remained idle until 1963 when about 45 surface diamond drill holes and 29 underground holes tested the magnetic anomaly and led to the dicovery of the orebody. A feasibility study was completed about 1965 and mining commenced in April, 1967. The mine recovered more than 15.5 million tonnes of ore grading about 5.9% fibre from the Porcupine and Snowshoe open pits which produced more than 910 thousand tonnes of asbestos by mine closure on August 19, 1978.

Tater Claims

Outside the mine property, some of the most aggressive early grass-roots exploration was conducted by a joint venture between Yukon Consolidated Gold Corp. Ltd. (Y.C.G.C.) and Consolidated Zinc Corporation, which carried out an aeromagnetic survey of the Clinton Creek valley in early 1957 and staked many magnetic anomalies and exposed ultramafites near the Clinton Mine. The joint venture, in conjunction with Asbestos Corporation Ltd., performed grid magnetometer surveys and mapping on several ultramafites, including the Acheron ultramafite which is now mainly covered by the Tater claims.

The Acheron ultramafite was originally staked as the Emu claims in August 1962 and subsequently restaked as the RG

claims in September 1963 by Asbestos Corporation Ltd., which explored with a ground magnetic survey and mapping prior to a short trenching program in 1964. The claims were transferred to D. Reinke in 1967 and optioned in 1968 to Acheron Mining Ltd. which performed a ground magnetometer survey. Further exploration was performed in a joint venture with Falcon Exploration Ltd. consisting of bulldozer trenching in 1971 plus 3 drill holes (277 m) and more bulldozer trenching in 1972. Acheron changed its name to Pan Acheron Resources Ltd. and conducted more bulldozer trenching in 1976. A single RG claim currently remains in good standing and is now surrounded by Tater claims.

The Judy ultramafite was first staked as the Judy claims in June 1964 by Cassiar Asbestos Corporation Ltd., which explored with bulldozer trenching in 1964, mapping and a magnetic survey in 1966 and bulldozer trenching in 1970.

The Cripple ultramafite is located across Clinton Creek within 1.5 km from the Snowshoe Pit. The western portion was first staked by Cassiar Asbestos Corporation Ltd. in 1959 as the Nancy and Dot claims, which were included in the Clinton Mine lease about 1964, and the eastern portion was staked as the Cripple claims about the same time, then restaked as the Tater claims in 1981 by Teslin Joint Venture (now Brinco Exploram Project). The ultramafite was exposed by the Clinton Mine access road, built about 1958, and by a single bulldozer trench, made by Cassiar Asbestos Corporation Ltd. about 1964, which crosses it higher on the hillside. The uppermost portion of the ultramafite is covered by thick alluvial gravels and clay deposits while the hillside below is covered by

serpentinite talus with occasional chrysotile veins up to 3 mm wide. Despite the close proximity of the Clinton Mine, this ultramafite remains virtually unexplored.

The Tim and Lookout ultramafites are small, poorly exposed ultramafites that were previously staked in conjunction with other nearby targets. The Tim ultramafite is located between the Judy and Cripple ultramafites and is exposed on the floor of a shallow bulldozer road that was made by Cassiar in 1964. The Lookout ultramafite consists of two small patches of serpentinite fragments located on a ridge overlooking the Fortymile River about 1.5 km south of the Acheron ultramafite. The target was staked as the Clin and Chin claims in July 1966 by Sphere Development Corporation Ltd., which flew an aeromagnetic survey in 1967 but performed no physical work.

GEOMORPHOLOGY

The Tater claims are situated within the unglaciated portion of the Yukon Plateau which is marked by poor bedrock exposures. Regional uplift in the late Tertiary, together with disrupted drainage patterns to the east caused by glacial advance in the Pleistocene from the Ogilvie Mountains, has resulted in substantial rejuvenation and some disruption of the drainage system. Major tributaries, such as Clinton Creek, are incised into steep, V-shaped valleys with low gradients and steep headwalls.

The Tater claims cover all three elements of terrain in this district - plateau, incised valleys, and alluvial

terraces. Gravels resembling the Klondike White Channel Gravel are present at about 700 m elevation on the Clinton Mine lease and are probably present on the Tater claims at similar elevations. Clay is common in overburden below the 700 m elevation and may be alluvial in origin. Vegetation consists of thick black spruce, alder, aspen and poplar. Permafrost occurs on some moss-covered, north-facing slopes.

Locating and mapping ultramafites on the property has been difficult even though some targets like the Acheron ultramafite are marked by a conspicuous lack of vegetation as plants do not grow well in ultramafite soils. Before TJV, most of the ultramafites in the Clinton Creek basin were initially mapped according to the size of the vegetation anomalies covering them. However, so much of the area is covered by fertile, clay-rich alluvium that using vegetation patterns as a mapping tool has been found unreliable.

Outcrops are rare and most ultramafite exposures consist of some highly weathered serpentinite fragments scattered across vegetation anomalies; sometimes with a few boulders showing through the soil cover. The best exposures are along the old trenches where the overburden has been removed.

REGIONAL GEOLOGY

The Clinton Creek camp is situated within the Yukon Plateau and is sharply bounded to the northeast by the late Cretaceous Tintina Fault. The district has a complex geological history resulting from tectonic activity that has thoroughly deformed and intermixed several major rock assemblages. Ages are difficult to estimate since the fossil record has mainly been obliterated by deformation and regional metamorphism and contacts are obscured by overburden cover.

Rocks in this region have been subdivided by government geologists into three major packages: Nasina Suite (OSD); Anvil Allochthon (CPv); and, Klondike Schist (LPK). In the continental collision model proposed by Tempelman-Kluit (1979), the Nasina Suite represents the North American plate margin material. The Anvil Allochthon and Klondike Schist represent seafloor material and continental "Stikinia" plate rocks obducted onto the North American plate during a collision in Jurassic(?) time. The thrust faulting associated with the collision resulted in complex interfingering of the three units, destruction of sedimentary features and development of new cataclastic textures.

Anvil Allochthon

The allochthonous overthrust block consists of an ophiolite suite composed of alpine-type ultramafite, gabbro, basalt, chert and limestone. In the Clinton Creek camp, these rock types are usually present as their metamorphosed equivalents: serpentinite with associated hornblende diorite,

amphibolite, and chlorite schist. The ophiolite assemblage has become highly dismembered by thrusting and most serpentinite bodies are enveloped in graphitic schists of the Nasina Suite.

The ultramafites (CPub) are typically fairly small bodies composed of massive, dark green, fine to medium grained magnetic serpentinite derived from both peridotite and dunite. Most of them are highly sheared, reflecting a stressful emplacement, and are enclosed in metamorphosed host rocks. No relationship has been established yet to link the metamorphic grade of surrounding rocks to fibre development within serpentinite. However, it seems probable that strong shearing in the wall rocks is important in creating islands of unsheared serpentinite within which tensional fracturing and fibre veins can develop.

Cross fibre veins in commercial-grade mineralization seldom show straining or strong disruption except within localized shear zones, indicating they formed at a late stage in the emplacement and alteration of the ultramafite. In the Clinton Creek and Caley orebodies, blocky fracturing with commercial fibre lengths and quantities constitute less than 10 per cent of the serpentinite. These zones are surrounded by sheared varieties of serpentinite such as fish-scale that are typical of other bodies in the camp.

Some serpentinite bodies contain augen-like bodies of relic, massive serpentinite or lens-shaped bodies of diorite. A few of the massive lenses, such as those at the Tjop property, situated midway between Clinton Creek and Dawson City, contain cross fibre veins that may have formed during or shortly after emplacement. Some of the fibre veins near the edges of these

bodies are highly deformed and drawn out. Similarly, fibre veins that formed in the blackwall alteration zones surrounding diorite lenses (black pods), such as those at the Toc property, about 3 km south of the Tjop property, often exhibit curved veins and chrysotile fibres that are bent in the direction of movement. Both types of bodies are usually too widely dispersed through a sheared serpentinite to have economic importance.

The margins of many serpentinite bodies are altered to soapstone, as at the Judy ultramafite. This suggests that temperatures exceeded 400 deg C for a short period after emplacement,probably during regional metamorphism. Quartz-carbonate alteration, which consists of magnesite, talc and opaline silicates, is common and is probably also a post-mineralization event since the alteration is sometimes pseudomorphic after chrysotile fibre. Transformations from serpentinite to quartz-carbonate are displayed best in the Clinton Creek Mine, where long fibre veins can occasionally be traced from serpentinite into highly altered rock. This is a gradual change from silky chrysotile to harsh opal along the veins and is not accompanied by physical disruption.

Fine to medium grained, light grey to dark green, biotite or hornblende-rich diorites occur along with the ultramafites at several locations and are usually considered to be part of the Anvil Allochthonous suite. The diorites occur as small lens-shaped bodies or "dykes" that are enclosed by serpentinite and often are associated with black-pod mineralization, as at the Toc property. Alternatively, diorite forms large, stock-like bodies up to several metres across adjacent to the ultramafites, as at the Tjop property. Contacts between the

larger bodies of diorite and serpentinite are usually altered to quartz-carbonate, whereas the smaller dykes usually exhibit "blackwall" alteration. This suggest that the diorites are slightly younger than the ultramafites. The smallest dykes are usually enveloped by highly sheared serpentinite and appear to have been squeezed and dismembered into their present lensy form by strong tectonic forces.

Nasina Suite

The Nasina suite has been defined by Tempelman-Kluit (1976) as a distal sequence of carbonaceous and quartz-rich sedimentary rocks. They have been mostly metamorphosed to greenschist facies and now consist of palegreen quartz-mica-chlorite schist, grey to silvery colored quartz-muscovite schist, graphitic schist,chloritic quartzite and minor quartz-biotite gneiss. Although the sequence is not well understood and correlations are difficult to establish, a tentative age of Ordovician to Devonian has been assigned to the Nasina. Rubidium/strontium and potassium/argon age determinations by Htoon (1979) near the Clinton Mine suggest a Permian age, although one sample of biotite schist returned a rubidium/ strontium age of 470 ma, which is Ordovician. The younger dates may reflect the date of latest metamorphism or of regressive (biotite to chlorite zone) metamorphism, while the Ordovician date may reflect the age of deposition or of earlier metamorphism.

Preliminary mapping by J.G. Abbott of DIAND in the vicinity of Clinton Mine during 1981 revealed the presence of slightly metamorphosed carbonaceous mudstone, limy sandstone and tuffaceous phyllite that he tentatively assigned to the

Nasina suite. These rocks probably represent the unmetamorphosed equivalents of the common Nasina suite rocks. They resemble rocks mapped elsewhere in Yukon that are Triassic in age and fossil conodants tentatively identified from Clinton Mine rocks in 1982 support this assumption. Abbott demonstrated fairly conclusively that the Nasina suite underlies the allochthonous assemblage and concluded that the graphite schist adjoining the orebody was derived from Nasina rocks.

Klondike Schist

The Klondike schist is a cataclastic rock that is thought to be derived from felsic intrusive rocks. In the Clinton Creek camp, quartz-rich cataclastics, gneisses and quartz-muscovite cataclastic schist are common. Age relationships are difficult to determine as the Klondike schists cannot be related to other rock units. Radiometric ages of 138 and 145 ma were obtained from samples of cataclastic material by Tempelman-Kluit (1976). These dates are late Jurassic and probably reflect the time of cataclasism.

Igneous Rocks

Igneous rocks in the belt consist of lower Cretaceous biotite granodiorite and quartz monzonite and Tertiary feldspar porphyries. These have been combined for simplicity on Figure 3 as unit Tqfp but are differentiated on GSC Map 1284a. One of the largest quartz monzonite stocks in the district is located about 2 km west of the Tjop claims. It consists of plagioclase, biotite and altered grains of hornblende with minor amounts of potash feldspar, quartz and magnetite. Granitic gneiss and

amphibolite have developed along contact zones. The eastern contact of this body was explored for tungsten mineralization by Noranda during 1981.

Small bodies of feldspar porphyry occur throughout the region. These rocks are characterized by phenocrysts of feldspar and quartz up to several mm in length in a light grey to grey-green, fine grained groundmass. One of the largest of these porphyry bodies, on Cassiar Dome, was staked by Cominco for molybdenum-tungsten potential as the Pluto claims and was drilled in 1981. A porphyry dyke at the southeast corner of the Tjop claims was staked in 1927 for sulphide mineralization as the Roal occurrence. Also, basalt associated with a small porphyry dyke on the Thane grid area was found to contain traces of uranium mineralization. The porphyry bodies are probably more numerous than was previously known and some may host important base metal mineralization.

Olivine basalt (Tv) occurs locally in the region and is probably the youngest rock type as it overlies all other units.

References

Htoon, M.
1979: Geology of the Clinton Creek asbestos deposit, Yukon Territory; unpublished M.Sc. Thesis, University of British Columbia.

Tempelman-Kluit, D.J.
1976: The Yukon crystalline terrane: Enigma in the Canadian Cordillera; Geological Society of America Bulletin, v. 87, pp. 1343-1357.

1979: Transported cataclasite, ophiolite and granodiorite in Yukon: Evidence of arc-continent collision; G.S.C. Paper 79-14.

GEOLOGY AND MINERALIZATION

The Tater claims are mainly underlain by low grade metamorphic rocks and cataclastic rocks of the Nasina Suite and Anvil Allochthon, respectively. The ultramafites consist of partially to highly sheared serpentinite bodies with abundant fish scale surrounding competent portions. Quartz carbonate alteration of the serpentinites is common throughout the area. Many of the serpentinites are light green, contain abundant bastites and generally resemble the ultramafites that make up the footwall of the Porcupine orebody at the Clinton Mine.

Rocks that surround the ultramafites mainly consist of graphitic schist, quartz-muscovite schist and chlorite schist. Like the ultramafites, these rocks weather recessively and are generally covered by alluvium throughout most of the region.

The Tater claims were staked to cover the previously mapped ultramafites as well as the areas between them which often contain high concentrations of asbestos fibres in the soil. Soil studies have shown that fibres up to 5 mm long are dispersed in soils throughout the area although very few fibre veins have been seen while prospecting because of the highly weathered nature of the ultramafite scree. Fibre veins tend to break up readily when exposed to the harsh climate of the Yukon and only the enclosing serpentinites persist on the surface of the ground for many seasons. This phenomenon is best seen at the Clinton Mine where a thick fibre mat has developed on the pit floor and specimens of ore with intact fibre veins are difficult to find only four years after mine closure.

Work by Acheron Mining Ltd. and others on the Acheron ultramafite showed that chrysotile fibre occurs in a zone up to 305 m long and 12 m wide within a large serpentinite body 1220 m by 610 m that is enclosed in argillite of the Nasina Series. The best diamond drill hole returned an 11 m section grading 1.7% fibre with maximum length of 6 mm (hole 3). The best fibre seen in the trenches is up to 9 mm long and occurs in narrow zones of semi-sheared serpentinite surrounded by highly sheared (fish-scale) serpentinite. Early magnetometer surveys indicate that the Lookout ultramafite may be part of this body but the area between them has never been explored with trenching because of thick overburden.

Chrysotile fibre up to 6 mm long occurs in zones up to 3 m wide on the southwest portion of the Judy ultramafite, which measures about 610 m by 305 m. The ultramafite is hosted by graphitic schists of the Nasina Series and is mostly covered by thin overburden. Four long trenches exposed mainly barren serpentinite through the central portion of the ultramafite and quartz-carbonate alteration along the margins.

The Cripple ultramafite measures approximately 1000 m by 500 m and is separated from the Judy ultramafite by two smaller patches of ultramafite scree, collectively called the Tim ultramafite. No outcrops have been located in the area but talus fragments exposed in bulldozer trenches contain medium grained serpentinite with occasional fibre veins up to 3 mm wide and 20 cm long. The only fibre located on the Tim ultramafite is from soil samples collected on a reconnaissance grid. Some of these loose fibres measured over 6 mm long.

SAMPLING AND TRENCHING

Soil sampling grids were established throughout the Tater claims area in 1981 and 1982 to investigate anomalous silt and soil responses from reconnaissance traverses performed earlier. On the claims, about 1289 soil and silt samples were collected during 1982 at 50 m spacing on compass lines 200 m apart. About 12.5 km of baselines were cut for survey control. A Kamatsu bulldozer was contracted for 3 days to reopen the access road to the Acheron target and to construct a 3 km long trail north to the Judy ultramafite and a 1 km long trail southeast to the Lookout ultramafite. Shallow bulldozer trenches were made at the end of each trail following anomalous soil responses in these areas. A full description of the sampling method used and treatment of samples is given in Appendix 1.

SAMPLING AND TRENCHING RESULTS

Seven medium-sized soil anomalies have been outlined on the Tater claims of which two, Anomalies M and N, were first indicated during 1981 sampling. Partial resampling during 1982 has revised the boundaries of these anomalies from previous reports. A composite map showing the location of all samples collected during 1981 and 1982, all bulldozer trails and trenches, earlier ground magnetometer surveys and probable outlines of the ultramafites are shown on Figures 4 and 5, in Pockets D and E. A description of each soil anomaly is given below.

Anomaly M

This anomaly consists of a cluster of four samples situated on a terrace which is likely underlain by thick gravel deposits. Point values range from 37b to 81d and have a slightly higher quantity of fibres than surrounding samples but the anomaly occurs less than 1.5 km from the mill tailings on Wolverine Creek and may be caused by airborne contamination. A series of high point value samples, collected during 1981 approximately 800 m to the northeast, reflected only a dusting of fibres on the surface of the ground when resampled during 1982. No outcrops of any kind occur in the area.

Anomaly N

This 1500 m long anomaly parallels the Clinton Mine road on the northeast side. It measures approximately 200 m wide over most of its length but bulges to about 400 m at the southeast end where talus from the Cripple ultramafite is best exposed on a steep hillside. The anomaly contains a large cluster of samples with point values up to 111a and points over 65a are common. Two old trenches made by Cassiar Asbestos Corporation Ltd. cut the anomaly near the center of the bulge and expose serpentinite float with occasional fibre veins up to 3 mm wide. Thick soils from a broad terrace to the north of the anomalous zone returned much lower point values which probably reflect airborne fibre contamination from the Clinton millsite located less than 2 km away.

Anomaly R

This dome-shaped anomaly is located on a steep sidehill on the northwest side of Eagle Creek and roughly covers part of the Tim ultramafite. A cluster of approximately 12 samples with point values up to 84a are cut by some old bulldozer trails made by Cassiar Asbestos Corporation Ltd. about 1964. Some light-green serpentinite fragments were found in the bulldozer cuts but the majority of the area is covered by thick soils and the ultramafite boundaries are not well defined. No fibre showings have been discovered while prospecting this anomaly.

Anomaly S

A cluster of four samples with relatively high amounts of fibre but low point values, were collected on the western extremity of the Judy ultramafite near three old trenches containing some fibre veins up to 6 mm wide. Point values reach 34a near the best showing, which probably contains less than 2% total fibre content over 3 metres. This showing is bounded by quartz-carbonate alterations on the south.

Anomaly T

This sausage-shaped anomaly occurs close to the center of the Judy ultramafite and is at least 150 m wide by 500 m long. It covers one of the largest vegetation anomalies in the area but outcrops are absent. Point scores of up to 50a occur across the anomaly but fibre quantities are generally medium to low. Two old trenches cut across the lower half of the anomaly and a new trench at the uppermost end was constructed by BEP during 1982. No significant amount of fibre was found in any of the trenches but a considerable amount of ground remains untrenched between them.

Anomaly U

Point scores up to 43a occur over an area at least 200 m wide by 400 m long near the widest part of the Acheron ultramafite. The area has been thoroughly trenched during previous programs and it is unlikely that a significant concentration of commercial asbestos exists on surface. Most point values are based on relatively low quantities of fibre in the soil. The best fibre seen in the trenches was isolated veins up to 9 mm wide in well sheared serpentinite.

Anomaly V

This is a cluster of five samples extending at least 200 m downhill from the center of a vegetation anomaly which marks the Lookout ultramafite. The best point score is only 42a but fibre quantities in all samples are relatively high. A trench made by BEP during 1982 about 50 m west of the upper end of the anomaly failed to uncover bedrock although some serpentinite rocks were found in the overburden. Prospecting has not located any asbestos-bearing float and outcrops are absent in the area.

SUMMARY AND RECOMMENDATIONS

The Tater claims were staked to cover several poorly exposed ultramafite bodies and some broad overburden covered areas that contain anomalous concentrations of asbestos fibres in the soil. The claims are situated on the northeast side of Clinton Creek, within 5 km east of the Clinton Mine.

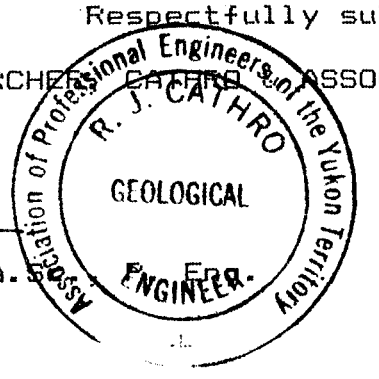
Soil studies were performed during 1981 and 1982 using a sampling technique pioneered by Teslin JV (now Brinco Exploram Project). Although the area is located close to the Clinton mine and has been staked several times since 1957, insufficient physical work has been done to evaluate the asbestos potential of this area. In general, the ultramafites are poorly exposed and trenching at the most exposed portions of the ultramafites failed to locate economic concentrations of asbestos.

During 1982, 1289 soil samples were collected to explore the asbestos potential of the areas not previously tested by trenching. Results of this work indicate that loose asbestos fibres occur in soils throughout the area although strong concentrations of fibres have been outlined at seven locations.

A two week program of detailed ground magnetometer surveys to better outline the ultramafite bodies beneath the overburden plus follow-up trenching or drilling of the best fibre dispersion survey anomalies is recommended.

Respectfully submitted,

ARCHER, CATHRO & ASSOCIATES LIMITED



R.J. Cathro, B.A.Sc., P.Eng.

J. Scott Murray

APPENDIX 1

FIBRE DISPERSION SURVEYS

THEORY

Fibre dispersion surveys take advantage of the fact that chrysotile is chemically resistant to weathering and maintains its fibrous integrity during weathering and erosion. Thus, fibre can be detected in soils whether it is being dispersed by normal residual erosion in unglaciated areas, such as the Clinton Creek camp, or by glacial scouring. Experience has shown that chrysotile fibre is so much more resistant to weathering than its host serpentinite that it can be found in soil in areas that are devoid of obvious serpentinite outcrops or talus.

In theory, the amount of fibre in the soil should be directly proportional to the amount of underlying mineralization, since the bulk of the fibre occurs in simple veins that break apart readily when subjected to weathering. Like conventional geochemical surveys, however, simple dispersion patterns and strongly anomalous contrasts only occur around buried fibre occurrences that are covered by simple soil profiles. TJV sampling has shown that all serpentinite bodies contain fibre and that even those that are apparently unmineralized have a low background level that is detectable in soil.

Fibre veins pinch and swell, and are usually divided along their length by a central parting. Weathering of chrysotile mineralization frees fibre veins from the walls and breaks their partings, causing the veins to disintegrate into rod-shaped fragments called fibre bundles (or spicks). Further weathering will cause these bundles to split lengthwise into thinner strands called fibrils. Experience has shown that individual fibrils are unusually strong and that they will seldom break transversely, although they

can split longitudinally into thinner fibrils. In soils, the longest fibrils reflect the maximum width of veins between partings but seldom the distance between the vein walls.

Much of what is known about the relationship between length and quantity in a fibre deposit has come from milling practise. TJV has assumed that the weathering of fibre is analagous to the milling of fibre to produce a commercial blend of lengths. Milling experience has shown that fibre lengths in a deposit are inversely proportional to the quantity of short fibres, and that the total quantity of fibre in the rock is roughly proportional to fibre length. This suggests that, under most conditions, the number of fibre veins that develop in a block of serpentinite is fairly constant and the main variable is fibre length (vein thickness). Thus, if conditions are favourable, longer fibres will form in many of the fractures, thereby increasing both the average length (and value) as well as the proportion of the rock that is fibre (ore). When conditions are unfavourable, only short fibre will form and the total fibre content of the rock will remain low. The validity of this concept is confirmed by the fact that long fibres are seldom found in lower grade ores.

The laboratory technique and interpretation methods used by TJV have been designed to identify samples that contain longer fibres and, by definition, have a better probability of having been derived from commercial mineralization. Most commercial deposits contain abundant 6.5 mm fibre. For example, Group 5 specifications stipulate that about 20% must exceed that length. Since 6.5 mm fibres are rare in TJV samples and have only been found in samples collected near important occurrences, that length has been chosen as an important threshold in fibre dispersion surveys.

POINT VALUES

In the TJV sampling, it has been found that most samples contain less than 100 fibres and that quantities exceeding 10,000 fibres are only obtained when sampling has encountered a fibre mat. A fibre mat is fairly uncommon in TJV sampling, either because the sample cannot be collected deep enough or because there is insufficient fibre in bedrock. Alternatively, some soils are too mixed by solifluction to permit the development of a mature profile. As a result, most samples do not contain enough fibres to be sure that the longest fibre present in the bedrock source are represented.

For example, the probability of collecting a fibre 6.5 mm long in soil over asbestos veins containing some fibres 6.5 mm long is high if the sample contains over 10,000 fibres (a fibre mat) but is poor if the sample contains only 10 fibres.

To overcome this difficulty, a "point" value is calculated by the laboratory which utilizes standard relationships between fibre lengths and quantities and greatly simplified the interpretation of soil results. By permitting the comparison of samples containing different quantities of fibre, the poinst help to overcome the field difficulty of collecting samples of uniform quality.

Using the example quoted above, the sample containing 10 fibres and a longest fibre of 3.2 mm would have the same point score (50 points) as the fibre mat sample with 10,000 fibres and a maximum length of 6.5 mm. A point score of 50 seems to be a good threshold value since nearly all soils tested from commercial-grade asbestos showings have scores of 50 or more.

Field testing of this method in 1981 showed that it loses its statistical validity once the number of fibres in the soil falls to a low level. For example, a soil sample containing only three fibres will give a point score of 34 if the longest fibre is 2 mm long, but a much higher score of 75 if the longest fibre measures 3 mm. To overcome this weakness, it was necessary to rate samples according to the number of fibres present by adding a suffix to the point number. Points with an "a" suffix have the highest reliability and those marked "e" the lowest, as shown below:

Suffix	Fibre quantity/sample
a	more than 250 fibres
b	100 to 249 fibres
c	20 to 99 fibres
d	6 to 19 fibres
e	1 to 5 fibres

Samples with quantity "a" are usually collected where soils are thinnest over ultramafites. Soild with "e" ratings generally fringe ultramafite bodies, contain spurious fibre because of contamination, or reflect deeper and more complex overburden profiles. For a given ultramafite, scores derived from "a" soils and from "e" soils will be roughly similar but the "e" scores will be more erratic. Statistics show that over 90% of all "e" scores were less than 50 points and fibres 3 mm or more in length seldom occur in "e" soils.

STATEMENT OF QUALIFICATIONS

J. Scott Murray

Scott Murray was raised at Abbotsford, B.C. and attended U.B.C., B.C.I.T. and Selkirk College. He was employed by Cassiar Asbestos Corp. from 1973 to 1978 as a geological technician at both the Cassiar and Clinton Mines. During this period he was engaged in all phases of mapping, surveying, grade control and exploration for asbestos fibre. From 1979 to present Mr. Murray has supervised asbestos exploration for Archer, Cathro & Associates (1981) Limited.

J. Scott Murray

STATEMENT OF QUALIFICATIONS

I, Robert J. Cathro, with business addresses in Whitehorse, Yukon Territory and Vancouver, British Columbia, and residential address in West Vancouver, British Columbia, do hereby declare:

1. I am a 1959 graduate of the University of British Columbia in geological engineering.
2. I have been engaged in geological engineering for over twenty years, the past seventeen of which have been as a consultant.
3. I am a registered professional engineer in British Columbia and in Yukon Territory.
4. I have supervised the work described in this report.

Robert J. Cathro, B.A.Sc., P.Eng.

Association of Professional Engineers of the Yukon Territory
R. J. CATHRO
GEOLOGICAL
ENGINEER

ARCHER, CATHRO
& ASSOCIATES LIMITED
CONSULTING GEOLOGICAL ENGINEERS

VANCOUVER, B.C. (604) 688-2568

BOX 4127, WHITEHORSE, Y.T. Y1A 3S9 (403) 667-4415

1016 - 510 WEST HASTINGS STREET
VANCOUVER, B.C. V6B 1L8

AFFIDAVIT

I, Joan Mariacher, of Whitehorse, Yukon make oath and say:

That to the best of my knowledge the attached Statement of Expenditures for exploration work on the Tater 29-68 and 71-86 mineral claims on Claim Sheet 116C/7 is accurate.

Joan Mariacher

Sworn before me at Whitehorse, Y.T.
this 10th day of
June, 198 3

Notary, Yukon Territory

091460

Statement of Expenditures
Tater 29-68 and 71-86 Claims
June 10, 1983

Bulldozer contractor - Lindsay Beck - 28 hours at $70/hour	$ 1.960.00
Assays - Geotor Labs - 1289 samples at $8	10,312.00
	$12,272.00

Lyndsay Bleck
Box 307
Dawson City
Yukon Yoncac

Aug 2, 1992

Archer, Cathro & Assoc. Ltd.
Box 4129
Whitehorse
Yukon Y1A 3S7

Re: Caterpillar D6 Diesel Rental -
Clinton Creek Project

July	28, 1992	9
July	29, 1992	9
July	30, 1992	10
July	31, 1992	4
August	1, 1992	1
August	2, 1992	8 1/2
	Total Time	41 1/2 Hours

41 1/2 Hours @ $90.00/Hour	$3,735.00
2 Hours Hauling Dozer to Site/Return	$150.00
Transport Dozer Dawson - Clinton - Dawson	$370.00
Total Costs	$3,755.00

Contractor: Lyndsay Bleck
Per Archer, Cathro: Shelley

Acme Surveys Inc.
185 12th Ave
Kamloops

OUR NUMBER 066780
DATE Aug 22/82
CUSTOMER'S ORDER
SALESMAN
TERMS
F. O. B.

SOLD TO Archer, Cathro & Ass.
Box 4127 Whitehorse YT
SHIPPED TO
ADDRESS
VIA

	Project B E.P.				
	Certificates ~~420~~ - 423				
	200 samples @ 8.00			1600	00

REDIFORM - 7M31

Geotex Services
[illegible] 12th Ave
Kamloops

INVOICE

O.K. NUMBER 066781

DATE Aug 29/92

SOLD TO Archer, Cathro & Ass (1981) Ltd
Box 4137, Whitehorse, YT

SHIPPED TO

ADDRESS VIA

	PROJECT B.E.P.				
	Certificates 924-927				
	200 Samples @ 8.00			1600	00

REDIFORM - 7M31

GEOTOR SERVICES

OUR NUMBER	066785
DATE	Oct 1/82
CUSTOMER'S ORDER	
SALESMAN	
TERMS	
F.O.B.	

SOLD TO ARCHER CATHRO + ASS.
1016 - 510 W. HASTINGS ST VANCOUVER

SHIPPED TO

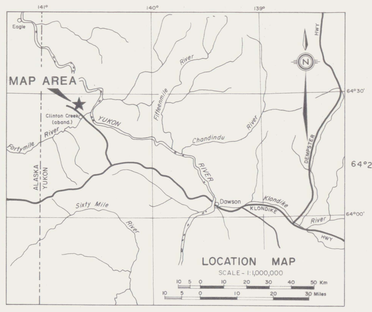
ADDRESS VIA

INVOICE

	B.E. PROJECT				
	850 Samples @ 8.00	6800	00		
	less ADVANCE	5000	00		
	TOTAL OWING			1800	00

[illegible] #108

REDIFORM - 7M31



LEGEND

CARBONIFEROUS TO PERMIAN

- CPub — Dark green serpentinite and quartz-carbonate rocks, contacts assumed
- Fibre Dispersion Survey anomaly outline
- Mine waste dump
- Mill tailings
- Mineslte open cut
- Claims boundary
- Mine lease boundary
- Magnetometer survey a boundary
- 2,000 — Ground magnetic contour, in gammas
- Picket line
- All weather road
- Dirt road
- Cat trail
- Bulldozer trench
- Diamond drill hole
- Excavator pit
- Asbestos showing
- .32a — Soil sample location and point value

NOTE: Chrysotile content of samples measured by Geotor Services Incorporated, Kamloops B.C.

091160

ASSOCIATION OF Professional Engineers of Ontario R. J. CATHRO GEOLOGICAL ENGINEER

Fig. 1

ARCHER, CATHRO & ASSOCIATES (1981) LTD.

CLAIMS, ULTRAMAFITES, MAGNETIC & FIBRE DISPERSION SURVEYS

TATER CLAIMS

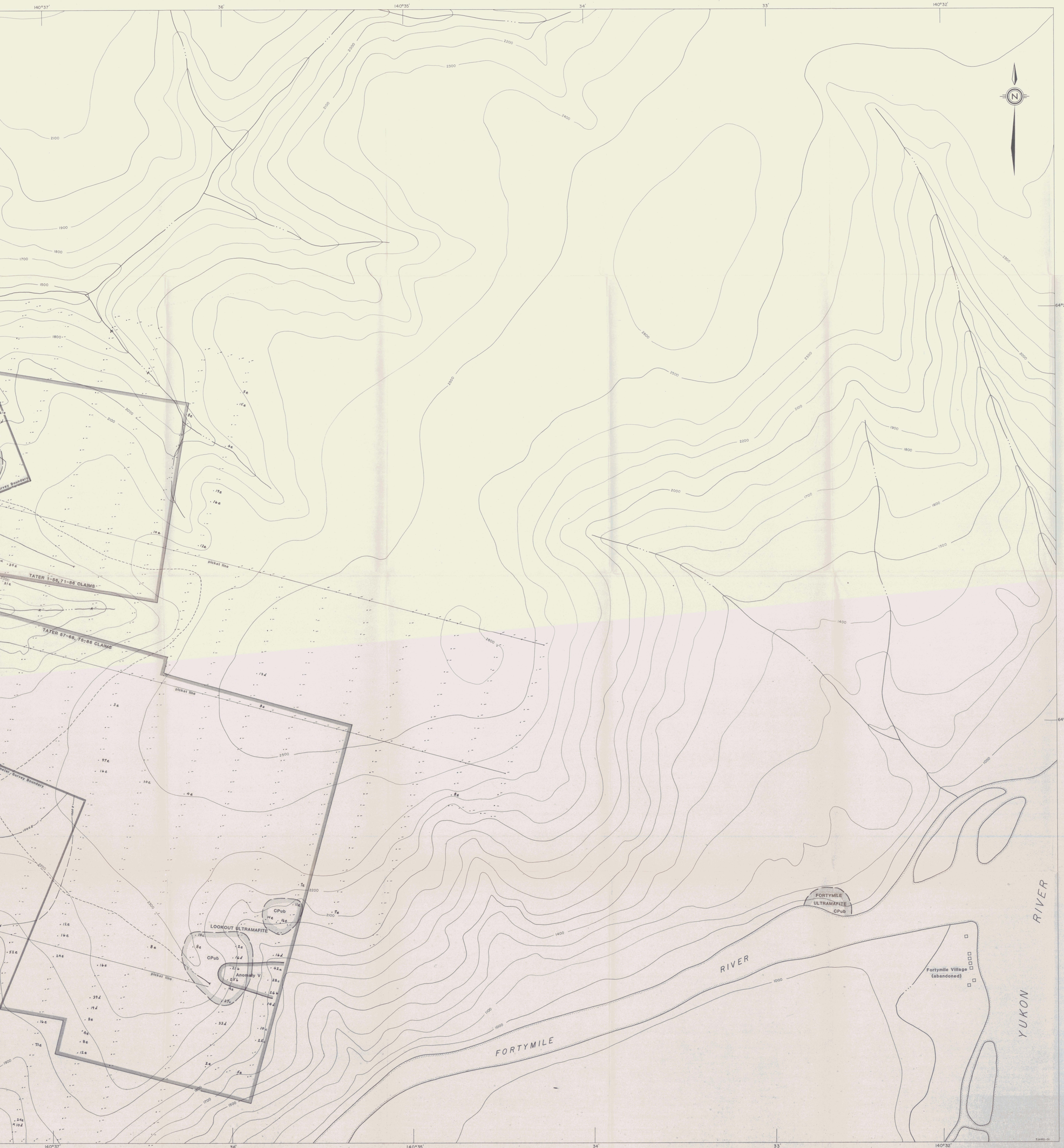
TESLIN JOINT VENTURE

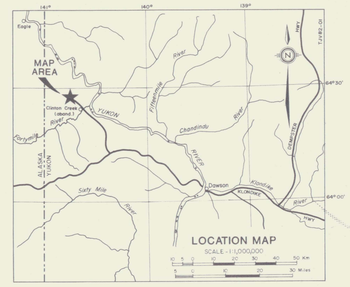
SCALE- 1:5000

100 50 0 50 100 200 300 400 Metres

100 50 0 50 100 200 300 400 Yards

To accompany report dated May/83





LEGEND

CARBONIFEROUS TO PERMIAN

- CPub — Dark green serpentinite and quartz-carbonate rocks, contacts assumed
- Fibre Dispersion Survey anomaly outline
- Mine waste dump
- Mill tailings
- Mine site open cut
- Claims boundary
- Mine lease boundary
- Magnetometer survey a boundary
- 2,000 — Ground magnetic contour, in gammas
- Picket line
- All weather road
- Dirt road
- Cat trail
- Bulldozer trench
- Diamond drill hole
- Excavator pit
- Asbestos showing
- 32a — Soil sample location and point value

NOTE: Chrysotile content of samples measured by Gector Services Incorporated, Kamloops B.C.

091460

Registered Professional Engineers of the Yukon Territory
R. J. CATHRO
GEOLOGICAL ENGINEER

Figure 2

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

CLAIMS, ULTRAMAFITES, MAGNETIC & FIBRE DISPERSION SURVEYS

TATER CLAIMS (EAST)

TESLIN JOINT VENTURE

SCALE – 1:5,000

To accompany report dated May/83